***Mimosa pigra* L.** black mimosa
FABACEAE

Synonyms: *Mimosa asperata* L.

General Description.—Black mimosa is also known as catclaw mimosa, thorny sensitive plant, giant sensitive plant, bashful plant, giant mimosa, dormilona, pigra, agüiste, amouretto, amourette-rivière, and banglin. It is a thorny upright to scrambling shrub 2 to 4 m in height and up to 12 cm in basal diameter. The plant usually has a single stem from the ground but may branch near the ground and form an inverse cone-shaped crown. There are relatively few branches. The shrub is supported by extensive lateral roots with numerous fine roots that have occasional nodules. Stems, limbs, twigs, and leaves bear curved thorns up to 7 mm long. Black mimosa produces a thin crown of touch-sensitive bipinnately compound leaves. Each leaf has four to 14 pairs of pinnae and 20 to 40 pairs of linear-oblong leaflets per pinna. The inflorescences are tight, subglobose mauve or pink heads with about 100 flowers, grouped one to three in the upper axils. The clustered brown legumes are densely bristled, 4 to 12 cm long, and breaking transversally into 14 to 26 segments, each containing one seed. The seeds are flattened, about 6 by 2.5 mm, and brown to olive green (Howard 1988, Pacific Island Ecosystems at Risk 2002, Stevens and others 2001).

Range.—The original range of black mimosa is uncertain. The contention that the native range extends from Mexico to northern Argentina (Stevens and others 2001) is supported by the fact that 440 species of insects and several fungi species keep it under control there (CSIRO 2002). On the other hand, a rich native tradition supports Equatorial Africa as being native range (Burkhill 1995). Perhaps it crossed the South Atlantic in prehistoric times or early in the colonization of the New World. More recently, the species has invaded most humid tropical and subtropical areas including Florida, Texas, and Puerto Rico (Natural Resources Conservation Service 2002). There are two varieties: var. *berlandieri* (Gray ex Torr.) B.L. Turner that occurs from the Texas to Costa Rica, and var. *pigra* that grows from Mexico to Argentina, Africa, and in the invaded ranges in the New and Old Worlds (Stevens and others 2001).

Ecology.—Presettlement populations of black mimosa in Costa Rica were found mainly on the edges of marshes and on large river floodplains. Today, they are found along roads and in marshy spots in pastures (Janzen 1983). The species is highly intolerant of shade. It requires full sunlight to flower and fruit and nearly full sunlight to survive. The two principal ingredients for successful establishment are moist or wet soils and disturbance that allows full sunlight. It is a fierce competitor with low vegetation and one of the few shrubs capable of succeeding in dense, tall grass swards. Black mimosa tolerates a wide variety of soil conditions, short-term flooding, seasonal drought, and grows at elevations from near sea level to 700 m (Janzen 1983). Although it grows mixed with other vegetation in its native habitat, the species forms pure stands with little understory in many of its exotic habitats (Pacific Island Ecosystems at Risk 2002).

Reproduction.—Black mimosa blooms continuously in moist habitat, intermittently in seasonally dry habitat. Bees pollinate the flowers and pods mature about 1 month after pollination (Binggeli 1997). Black mimosa grows rapidly and

can begin producing seed in as little as 3 months after emergence (Department of Natural Resources and Mines 2002). One average plant can produce more than 9,000 seeds annually (Marko 2002). The pod segments disperse by floating on water and clinging to clothing and possibly animal fur and feathers. A sample of black mimosa pods in Puerto Rico contained an average of 15.0 seeds/pod. The seeds weighed an average of 0.0166 g/seed. Sown on commercial potting mix between 6 and 20 days, 81 percent of the seed germinated. Germination is epigeal (author's observation). Scarification is required for quick and uniform germination. In an experiment with several treatments of temperature and storage, germination percentages of 75 to 94 percent were observed (Creager 1992). Seeds can remain viable in dry soil for more than 2 years. Plants sprout freely following fires (Binggeli 1997). Layering occurs when stems become prostrate and covered with litter.

Growth and Management.—Black mimosa grows rapidly. Seedlings grown in a greenhouse reached 25.8 $\pm$ 0.5 cm in 30 days, 97.1 $\pm$ 16.2 cm in 90 days, and 335.1 $\pm$ 15.9 cm in 360 days (Swarbrick and Mercado 1987). Plants in Puerto Rico in tall, dense grass swards and disturbed upland sites grow about 1.0 to 1.5 m the first year, 1 m in the second year, and usually live 2 to 3 years. Larger plants tend to lie down due to weight and often do not become taller than 3 m (author's observation). Maximum age is about 5 years (Binggeli 1997). In an effort to control the aggressively spreading infestation, nine insect enemies and two pathogenic fungi have been released in Australia. Most have become established but so far have had little effect on black mimosa populations (Marko 2002). However, a recent release of *Malacorhinus irregularis*, a defoliater beetle from Mexico shows early promise (CSIRO 2002). Mowing is ineffective (Creager 1992). Grubbing of adult plants achieved only about 82 percent mortality (Cross and Wiedemann 1997). Until effective biological control can be achieved, chemical control is probably the best approach for spot infestations (Marko 2002).

Benefits and Detriments.—Black mimosa invades dense grass swards and in some environments helps them move on to the brush and secondary forest stages. It also protects the soil in disturbed sites. Although the cover and diversity it furnishes is probably beneficial for wildlife in artificially maintained exotic grass swards, the species can reduce wildlife populations in natural swards such as river floodplains in Australia (Marko 2001). The plant has been used as a green manure, a cover crop, for fuel wood, and as beanpoles. Although cattle and horses generally do not eat black mimosa because of the thorns (Binggeli 1997), with 22 percent foliar protein, it was found to be perfectly acceptable to rabbits (Lebas and others 1986). Black mimosa can be weedy in row crops and plantations, and a serious problem in pastures and hay fields. The thorny branches make it difficult for people to walk through fields and along trails where it grows. In Africa, it is planted as a barrier around fields and cattle enclosures to discourage human intruders and animal predators. The species is used in a number of herbal remedies and magic rites in Africa (Burkill 1995).

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John K. Francis, Research Forester, U.S. Department of Agruiculture, Forest Service, International Institute of Tropical Forestry, Jardín Botánico Sur, 1201 Calle Ceiba, San Juan PR 00926-1119, in cooperation with the University of Puerto Rico, Río Piedras, PR 00936-4984